IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA
CHARLESTON DIVISION

OHIO VALLEY ENVIRONMENTAL COALITION, WEST VIRGINIA HIGHLANDS CONSERVANCY, and SIERRA CLUB,

Plaintiffs,

v.

CIVIL ACTION NO. 2:13-21588
(Consolidated with 2:13-16044)

FOLA COAL COMPANY, LLC,

Defendant.

PLAINTIFFS' POST-TRIAL BRIEF

Plaintiffs Ohio Valley Environmental Coalition, West Virginia Highlands Conservancy, and Sierra Club ("OVEC") filed this case against Defendant Fola Coal Company, LLC ("Fola") pursuant to the citizen suit provisions of the Federal Water Pollution Control Act ("Clean Water Act" or "CWA"), 33 U.S.C. § 1251 et seq., and the Surface Mining Control and Reclamation Act ("SMCRA"), 30 U.S.C. § 1201 et seq. OVEC claims that Fola has violated its WV/NPDES discharge permits under the CWA and its mining permits under SMCRA at its Surface Mine Nos. 2, 4A and 6 in the Leatherwood Creek watershed. Fola's three WV/NPDES permits for these mines each contain a condition which incorporates by reference West Virginia Code of State Rules § 47-30-5.1.f, which states that "discharges covered by a WV/NPDES permit are to be of such quality so as not to cause violation of applicable water quality standards promulgated by [West Virginia Code of State Rules § 47-2]." This Court has held that this is an enforceable permit condition. Mem. Op. at 2, 23, ECF No. 94.

Fola's three SMCRA permits at these mines were issued pursuant to the West Virginia

Surface Coal Mining and Reclamation Act ("WVSCMRA"). W. Va. Code §§ 22-3-1 to -33. Regulations passed pursuant to the WVSCMRA require permittees to comply with the terms and conditions of their permits and all applicable performance standards. W. Va. Code R. § 38-2-3.33.c. One of these performance standards requires that mining discharges "shall not violate effluent limitations or cause a violation of applicable water quality standards." *Id.* § 38-2-14.5.b. Another performance standard mandates that "[a]dequate facilities shall be installed, operated and maintained using the best technology currently available . . . to treat any water discharged from the permit area so that it complies with the requirements of subdivision 14.5.b of this subsection." *Id.* § 38-2-14.5.c.

Thus, both Fola's CWA and SMCRA permits require it to comply with water quality standards. West Virginia's narrative water quality standards are violated if wastes discharged from a surface mining operation "cause . . . or materially contribute to" 1) "[m]aterials in concentrations which are harmful, hazardous or toxic to man, animal or aquatic life" or 2) "[a]ny other condition . . . which adversely alters the integrity of the waters of the State." 47 C.S.R. § 47-2-3.2.e, -3.2.i. Additionally, "no significant adverse impact to the chemical, physical, hydrologic, or biological components of aquatic ecosystems shall be allowed." *Id*., § 47-2-3.2.i. This Court has held that "a [West Virginia Stream Condition Index] WVSCI score below the impairment threshold of 68 indicates a violation of West Virginia's biological narrative water quality standards, as embodied in § 47-2-3.2.e and -3.2.i, in the stream where the score was assessed." *OVEC v. Fola Coal Co. (Stillhouse)*, 2015 WL 362643, at *9 (S.D. W.Va. 2015). OVEC contends that Fola is violating those standards at all three of its mines, because the streams below those mines all have WVSCI scores below 68.

At the close of the trial, the Court ruled from the bench that OVEC had proven by a

preponderance of the evidence that conductivity associated with surface mining is a general cause of biological impairment in downstream waters. Tr. 4:260-61. Specifically, the Court found that "conductivity as a byproduct of a consistent mix of [ions] related to mining activity, and typical of alkaline mine drainage in[] the Appalachian region, may cause or may materially contribute to biological impairment to aquatic life as measured by the West Virginia Stream Condition Index scores, and this in turn may constitute a violation of the [narrative] water quality standards applicable to the permits at issue in this case."[1] *Id.* This finding is consistent with the Court prior finding in the Fola Stillhouse case that "surface mining causes or materially contributes to high conductivity in adjacent streams and that, controlling for other potentially confounding factors, the unique ionic mixture of alkaline mine drainage is scientifically proven to cause or materially contribute to a significant adverse impact to the chemical or biological components of aquatic ecosystems." *OVEC v. Fola Coal Co. (Stillhouse)*, 2015 WL 362643, at *9 (S.D. W.Va. 2015).

The Court directed the parties to brief only the issue of specific causation. Tr. 4:261. In toxic tort cases, general causation focuses on "the levels of exposure that are hazardous to human beings generally," while specific causation focuses on "plaintiff's actual level of exposure." *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 263 (4th Cir. 1999). Similarly, in this case involving environmental rather than human harm, general causation focuses on the levels of exposure that are hazardous to aquatic life generally, while specific causation focuses on the actual level of exposure to aquatic life in the streams below Fola's three mines.

In its prior analyses of specific causation and material contribution in the Elk Run and

[1] The transcript for the trial in this action contains errors, as demonstrated by the quotation above. The parties plan to confer about these errors and submit a motion or motions to the Court citing specific errors and requesting a correction of the record.

Fola Stillhouse mining cases, this Court evaluated the following factors: (1) whether the downstream waters are biologically impaired, as measured by a West Virginia Stream Condition Index (WVSCI) score below 68; (2) whether the discharged "ionic pollution is of a characteristic composition presently known in the scientific community to cause or contribute to impairment in Central Appalachian streams"; (3) whether the discharged mine water contains conductivity exceeding 300 µS/cm and sulfate exceeding 50 mg/l; (4) whether there is a pattern over time of increasing conductivity and decreasing WVSCI scores; (5) whether mining is the only land use activity in the watershed that could account for the changed water chemistry; (6) whether the taxonomic changes in the biological community in downstream waters show a reduction in sensitive taxa, especially mayflies, and an abundance of intolerant taxa; and (7) whether other site-specific factors like stream habitat, embeddedness or temperature could cause the observed impairment. *OVEC v. Elk Run Mining Co.*, 24 F. Supp. 3d 532, 563-78 (S.D. W.Va. 2014); *OVEC v. Fola Coal Co. (Stillhouse),* 2015 WL 362643, at *19-*21. As we show below, all of these factors support a finding of specific causation in this case.

A. Facts

Fola's three mines are located along the southern portion of the Leatherwood Creek watershed: (1) Fola Surface Mine No. 2 in Clay and Nicholas Counties, West Virginia; (2) Fola Surface Mine No. 4A in Clay County, West Virginia; and (3) Fola Surface Mine No. 6 in Nicholas County, West Virginia. Stipulation at ¶1-2, 19, 39, ECF No. 53, Plaintiffs' Exhibit (PEX) 73. About sixty percent of the Leatherwood Creek watershed above Right Fork has been disturbed by mining activities. CHIA, PEX 89 at PE0564-65.

OVEC presented testimony from three scientists who were qualified as experts in

stream ecology.[2] Dr. Swan visited each site, sampled the benthic communities, assessed the habitats, and computed the WVSCI and Rapid Bioassessment Protocol (RBP) scores for each site. Tr. 3:30-52. Dr. Palmer evaluated the pre- and post-mining water quality, WVSCI and habitat data and opined on general and specific causation. Tr. 2:81-196. Dr. Baker visited each site, performed a causal analysis of the data in the WVDEP database on stream conditions in West Virginia, and opined on general and specific causation. Tr. 3:81-199.

1. Site Histories

During her testimony, Dr. Palmer described in detail the history of each of the streams at issue, from a time-period prior to Fola's mining to the present. At each site, she explained a pattern of increasing conductivity and sulfate, which corresponds to Fola's mining activity. Corresponding to that pattern, was a pattern of declining WVSCI scores to a point of biological impairment.

a. Fola Surface Mine No. 2 (Road Fork)

Fola's mining activities at Surface Mine No. 2 are regulated under WV/NDPES Permit WV1013840 and West Virginia Surface Mining Permit S201293, which are still in effect. Stip. at ¶¶6-7. This mine has three valley fills which drain into Outlet 001, which is the only major drainage feeding Road Fork from this permit. *Id*. at ¶3-5, ¶10; Tr. 2:153. Road Fork flows into Leatherwood Creek. Stip. at ¶3.

Prior to mining, water quality in Road Fork was good. WVDEP's 1994 Cumulative Hydrologic Impact Assessment (CHIA) stated that "Road Fork does not appear heavily impacted by extensive past mining which has occurred in this area. This is indicated by low

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[2] This Court has twice found Dr. Palmer's expert testimony on aquatic ecology in similar cases to be "highly persuasive." *Elk Run,* 24 F. Supp. 3d at 561; *Fola (Stillhouse)*, 2005 WL 362643, at *17. Fola did not challenge or cross-examine Drs. Swan or Baker about their qualifications as stream ecologists. Tr. 3:34, 52, 92, 169.

metals and sulfates that are less than 30 milligrams per liter." CHIA, PEX 118 at PE1209-10; Tr. 2:153-54. Pre-mining water quality data showed that conductivity levels in Road Fork were below 300 µS/cm, which is the EPA benchmark for protecting Appalachian streams from biological impairment. JEX 17; Stip. at ¶12; PEX 37; Tr. 2:154-55.

After mining began, sulfate and conductivity levels rose, with conductivity levels in Road Fork consistently over 3000 µS/cm and once over 5000 µS/cm. Stip. at ¶13; PEX 37; Tr. 2:155-56. Sulfate levels in Road Fork have consistently been over 1000 mg/l and sometimes over 2000 mg/l. *Id.* In 2011 and 2012, the level of conductivity discharged from Outlet 001 was almost always above 2000 µS/cm and once was over 4000 µS/cm. Stip. at ¶14; PEX 39; Tr. 2:157-58. In May 2014, the conductivity of water discharged from Outlet 001 was 2920 µS/cm and the sulfate level was 1900 mg/l. PEX 2-3, 5 (DS119-6).

From 2011 to 2014, Fola's consultant measured WVSCI scores in Road Fork downstream of Outlet 001 to be between 46 and 56, which is well below the U.S. EPA's 68 cutoff score for biological impairment. Stip. at ¶17; PEX 40; PEX 129 at PE1487, PE1489; Tr. 2:87-89, 158-61. In May 2014, OVEC's expert, Dr. Swan, sampled Road Fork below Outlet 001 and measured a WVSCI score of 39.66 and a genus-level GLIMPSS score of 20.22, which is below the GLIMPSS' 52 cutoff score for biological impairment. PEX 25; PEX 173 at JE0024; Tr. 2:89-90, 161; Tr. 3:36-37. WVDEP listed Leatherwood Creek and Road Fork on its 2012 CWA § 303(d) List as biologically impaired due to mining. Joint Exhibt (JEX) 20, List pages 10-11; Tr. 2:149. In its Elk River Watershed TMDL report, WVDEP determined that the ionic toxicity in Road Fork is related to elevated sulfates and other dissolved solids and is a significant biological stressor. JEX 16 at JE0578-79; Tr. 2:150-51. Dr. Swan measured the RBP habitat score in Road Fork as 163, which in the optimal range. PEX 31; Tr. 3:47.

b. Fola Surface Mine No. 4A (Right Fork)

Fola's mining activities at Surface Mine No. 4A are regulated under WV/NPDES Permit WV1013815 and West Virginia Surface Mining Permit S200502, which are still in effect. Stip. at ¶¶23-24, 26. Outlets 22, 23, and 027 of Surface Mine No. 4A discharge into Right Fork of Leatherwood Creek. *Id.* at ¶21-22; PEX 42; Tr. 2:165. In 2013, the flows from these outlets were 160-170 gallons per minute (gpm) at Outlet 022, 160-170 gpm at Outlet 023, and 80 gpm at Outlet 027. Stip. at ¶32; PEX 46.[3]

Prior to mining, water quality in the streams in Right Fork watershed was mixed, as a result of some pre-Fola mining in certain subwatersheds, but the streams were mostly unimpaired. Tr. 2:171, 175-76, 191. WVDEP's 2003 CHIA stated that the upper reaches in the watershed had low sulfates, but some lower reaches had elevated sulfates due to previous mining. PEX 89 at PE0574-75, 562-63; Tr. 2:167-69. The CHIA also found that "all [monitoring] stations provide adequate habitat and contain populations of benthic macroinvertebrates. All the stations have high EPT indices," which indicates high water quality. PEX 89 at PE0577-78; Tr. 2:168. The stations had "a lot of pollution-intolerant taxa." *Id.* Pre-mining water quality data show that conductivity levels in Right Fork were mostly below 300 µS/cm, but with sporadic values ranging from 500 to 1500 µS/cm due to the previous mining. PEX 44; Tr. 2:170-71. In 1997, WVDEP measured the WVSCI score in

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[3] At the close of OVEC's case, Fola moved for a directed verdict as to Mine 4A on the ground that there are five other mine outlets between Outlets 022, 023, and 027, and that OVEC's downstream sampling site did not isolate the effects of those three outlets compared to the other five intervening outlets. Tr. 2:199; Tr. 3:202-03. Fola's motion is flawed because OVEC only has to show that discharges from the three outlets materially contribute to impairment, not that they are the sole cause of impairment. The combined flow from Outlets 022, 023 and 027 is about 400-420 gpm, which converts to about 576,000 to 604,800 gallons per day. In April 2012, WVDEP measured the total flow at the mouth of Right Fork as 7.49 cubic feet per second, which converts to 4.5 million gallons per day. Defendant's Exhibit (DEX) 198 at FOLA#4A000986. Thus, without accounting for the variability in rainfall contributions, these three outlets contribute roughly one-eighth or more of the flow in Right Fork. This is a material contribution to the observed impairment, regardless of whether other outlets also contribute. Fola's motion should therefore be denied.

Right Fork to be 84, which was excellent. JEX 23 at 68; Tr. 2:173. In 2000 and 2001, Fola's consultant measured the WVSCI scores at two sample sites (FOLA-6 and -7) in the main stem of Road Fork below the current mine site and three of the four scores were above 68, showing no impairment. Stip. at ¶22, 29-31; Tr. 2:177. Out of all sixteen sample sites with 32 WVSCI scores in 2000-01, only six scores were below 68. Stip. at ¶22.

After mining began, sulfate and conductivity levels rose, with conductivity levels in Right Fork since 2011 mostly over 1500 µS/cm and sometimes over 2500 µS/cm. Stip at ¶33; PEX 45; Tr. 2:178. Since 2011, sulfate in Right Fork has consistently been over 600 mg/l and sometimes over 1200 mg/l. Stip. at ¶33; PEX 45. In 2012-13, the conductivity in discharges from Outlets 22, 23, 27 at Mine No. 4A consistently ranged from approximately 1500 µS/cm to above 3000 µS/cm. Stip. at ¶32; PEX 46; Tr. 2:180. In May and September 2014, the conductivity of water discharged from Outlets 022, 023 and 027 was 1820 to 2958 µS/cm and the sulfate level was 920 to 1800 mg/l. PEX 2-5. These numbers were all much higher than what was recorded in mined areas prior to Fola's operations. Tr. 2:179.

In 2012, WVSCI scores in Right Fork were below 30, indicating biological impairment. Stip. at ¶34-35; PEX 48; Tr. 2:180-81. In 2014, Dr. Swan measured the WVSCI in Right Fork below Outlets 022, 023 and 027 to be 38.21 and the genus-level GLIMPSS score to be 25.79, which both indicate biological impairment. PEX 25; Tr. 2:184. WVDEP listed Right Fork on its 2012 CWA § 303(d) List as biologically impaired due to mining. JEX 20, JE1067; Tr. 2:149. In its Elk River Watershed TMDL report, WVDEP determined that ionic toxicity in Right Fork is related to elevated sulfates and other dissolved solids and is a significant biological stressor. JEX 16 at JE0578-79; Tr. 2:150-51. Dr. Swan measured the RBP habitat score for Right Fork as 172, which is in the optimal range. PEX 32; Tr. 2:185.

c. Fola Surface Mine No. 6 (Cogar Hollow)

Fola's mining activities at Surface Mine No. 6 are regulated under WV/NPDES Permit WV1018001 and West Virginia Surface Mining Permit S2011999, which are still in effect. Stip. at ¶42-44. The mine has three valley fills which drain into Outlets 013, 015, and 017, which in turn discharge into Cogar Hollow, a small tributary of Leatherwood Creek. *Id.* at ¶40-41; PEX 52-53; Tr. 2:187-88. Monitoring point S3-1A is located in Cogar Hollow below the valley fills and the outlets. *Id*. In 2000, prior to mining, WVDEP described that monitoring point as "above the influence of any mining." PEX 126 at PE1353; Tr. 2:189. In addition, at that time, "all [monitoring] stations provide adequate habitat and contain populations of benthic macroinvertebrates. All stations have high EPT indexes," which show that the water quality was high. PEX 126 at PE1361; Tr. 2:190.

Prior to mining, the conductivity levels in Cogar Hollow at point S3-1A were almost always well below 300µS/cm and sulfates were also low. Stip. at ¶45; PEX 54; Tr. 2:190-91. After mining began upstream from that point, conductivity and sulfate levels at that point rose to very high levels, with conductivity mostly over 4000 µS/cm and sulfate mostly over 2000 mg/l. Stip at ¶46; PEX 55; Tr. 2:191. Since July 2012, the levels of conductivity discharged from Outlets 013, 015, 017 have consistently ranged from 3000 µS/cm to 5000 µS/cm. Stip. at ¶47; PEX 56; Tr. 2:191-92. In May 2014, the conductivity of water discharged from these outlets was 2910 to 3202 µS/cm and the sulfate level was 1900 to 2400 mg/l. PEX 2-3, 5.

In 2014, Dr. Swan sampled the benthics in Cogar Hollow below the mine site and found a WVSCI score of 41.81 and a GLIMPSS score of 20.03, which both show high levels of biological impairment. PEX 25; Tr. 2:194. Dr. Swan measured the RBP habitat score for Cogar Hollow as 145, which is in the suboptimal range. PEX 30; Tr. 3:44.

2. Dr. Palmer's Analysis of Causation

In her review of the site histories, Dr. Palmer pointed to important site-specific factors that supported her conclusions that it is the ionic mixture of water discharged from each of Fola's mines that is the cause of biological impairment in the tributaries of Leatherwood Creek at issue in this case. Tr. 2:142, 187, 195-96. First, Dr. Palmer established that each of the streams at issue was, in fact, biologically impaired, as indicated by a WVSCI score below 68 (and in the case of Road Fork and Right Fork by placement on the WVDEP's 303(d) List.) Tr. 2:87-90, 149, 158-61, 180-81, 194-95; *see also*, PEX 25; JE20 at JE1067-68.

Second, Dr. Palmer established that the ionic composition of each of the streams, and of the runoff from the mines in question, was the same suite of chemicals (sulfates, bicarbonates, calcium, and magnesium) consistently identified as characteristic of alkaline mine drainage in the region. Stip. at ¶¶ 18, 36, 38, 48; PEX 38, 49, 57; Tr. 2:93, 156-57, 181-84, 192-93. She confirmed that the post-mining specific conductivity at each stream was uniformly well above 300 µS/cm (consistently in the 2000-3000 µS/cm range, and sometimes as high as 4000-5000 µS/cm.) PEX 37, 45, 55; Tr. 2:155-56, 178, 191. Indeed, the post-mining ionic composition was very similar to that which Kunz used in his 2013 toxicity tests of reconstituted water representing Fola's alkaline mine drainage into Boardtree Branch, and in much higher concentrations than those at which Kunz found adverse effects to the mayfly *Isonychia*—1090µS/cm. Tr. 2:156-57, 181-84, 192-93; PEX 173 at JE0160.

As described in the previous section, Dr. Palmer extensively reviewed the histories of each of the mines and streams at issue, and showed how both water quality and WVSCI scores changed in temporal proximity to Fola's mining operations in the Leatherwood Creek watershed. *See* section 1, *supra*. Dr. Palmer explained that in each of the watersheds, mining was the only

land use during the period in which conductivity rose and biological scores decreased. Tr. 2:153, 178, 191. She recalled that overall mining in the Leatherwood Creek watershed was as high as 40 percent of the land area and in specific subwatersheds it reached as high as 80 percent. Tr. 2:144.

In reviewing the data Dr. Swan used to compile his WVSCI scores, Dr. Palmer noted that there was not a single mayfly present at any of the sites in question. PEX 26; Tr. 2:162, 185. This was significant as Dr. Palmer had pointed to several previous studies, including the EPA Benchmark, in which the decline of mayflies in the field, and harm to mayflies in the lab, was a significant marker of the effects of alkaline mine drainage. PEX 173 at PE1536, JEX 1 at JE0010, PEX 173 at PE1832; Tr. 2:105-07, 137. Dr. Palmer reviewed the site specific information for other factors, notably habitat and RBP scores, and did not believe that those factors in the streams at issue could explain the observed level of biological impairment. PEX 25, 30-32, 40; Stip. at ¶17; Tr. 2:160-62, 185, 194-95. This conclusion is supported by analyses in the EPA Benchmark showing the presence of mayflies at nearly all sites—regardless of habitat quality, *unless* those sites were also subject to high levels of conductivity. JE 17 at JE0773, JE0777, JE0783, JE0792.

3. Dr. Baker's Causal Analysis

Dr. Baker explained his causal analysis supporting his determination that conductivity was the primary cause of impairment. Dr. Baker began his analysis by reviewing the literature. Tr. 3:93. As had Dr. Palmer, he noted that investigators had identified a characteristic set of ions—sulfates, bicarbonates, magnesium, and calcium, which led to biological degradation in Appalachian streams. Tr. 3:95-102. He compared this to the Hansen data, which demonstrated that those same ions dominated the mixture in effluent from Fola's mines and in the tributaries

of Leatherwood Creek at issue in this case. *Id.* at 100-102; PEX 3-4, 6. Dr, Baker also explained that several independent researchers had examined the relationship between conductivity from alkaline mine drainage and biological degradation using numerous datasets, analytical techniques, and methods for controlling confounding factors.[4] He concluded that the relationship between high conductivity from alkaline mine drainage and biological impairment had been investigated enough not simply to consider it a theory, but rather, a fact of science. Tr. 3:125.

Dr. Baker next explained how he used a filtered dataset of West Virginia streams to examine the factors influencing impairment in streams below surface mines. Tr. 3:126-128; PEX 61. He noted that several factors (including forest cover, stream width, and dissolved oxygen) did not seem to vary much between reference streams, unimpaired non-reference streams, and impaired streams. Tr. 3:130-32. Habitat factors, such as RBP and embeddedness, were noticeably different between reference streams and non-reference streams; they were not, however, markedly different in unimpaired non-reference streams and reference streams. *Id.* at 130. Temperature was not well distinguished between reference sites, unimpaired non-references sites and impaired sites. *Id.* at 131. In contrast, measures of stream chemistry, such

[4] Dr. Baker explained that some researchers, such as the EPA authors of the Benchmark study, used a large portion of the EPA dataset, while others, such as those who authored the "How Many Mountains" study, used a heavily filtered version of that data, and still more collected their own data. Tr. 3:123-24, 145. He estimated that sltogether, researchers had used "six to ten" different statistical techniques to test the relationship. *Id.* at 123. For example, the EPA Benchmark used species sensitivity distributions looking at the extirpation concentrations for individual taxa and assessing at what level five percent of the taxa would be lost. *Id.* at 102-03, 122. The "How Many Mountains" study looked at changes in the community structure using taxon abundance, rather than presence or absence, using two statistical models—TITAN and GAMs. *Id.* at 107-09. Different studies also assessed the causal nature of the relationship, and controlled for alternative explanations of impairment in various ways. For example, the Benchmark used a weight-of-the-evidence approach to assess causation and potential confounding factors. *Id.* at 103-06, 124. The "How Many Mountains" study used a heavily filtered dataset, and controlled for habitat using multivariate statistical techniques. *Id.* at 107-09, 112-13. Researchers Pond and Timpano used site selection—where impacted sites had habitat characteristics similar to reference reaches—to eliminate habitat factors as confounding variables. *Id.* at 114-16, 124. All in all, Dr. Baker estimated that researchers used five or six different methods to analyze possible confounding factors and identify the most likely cause of biological impairment. *Id.* at 124.

as conductivity levels, and sulfate concentrations, were similar in unimpaired non-reference streams and reference streams, but markedly different in impaired streams. *Id.* at 133-34. This visual analysis of the data gave Dr. Baker an early indication that stream chemistry was likely to be the main driver of stream impairment.

Dr, Baker next examined these patterns using site specific data. Tr: 3:135-41. He plotted habitat scores from Dr. Swan's RBP assessments on a graph showing habitat scores of reference streams, unimpaired non-reference streams, and impaired streams. *Id.* at 135-36; PEX 62. Given Dr. Swan's RBP scores, habitat in Road Fork, Right Fork, and Cogar Hollow is on par with several reference streams and a multitude of unimpaired streams. *Id.* Even at an RBP score of 125, lower than even the worst of Dr. Menzie's assessments, there are many unimpaired streams and "[i]t would be very hard to justify claiming that habitat was causing impairment at that level." Tr. 3:136; *see also,* PEX 62. Similarly, with temperature, there is a mix of reference, unimpaired non-reference streams, and impaired streams even at temperature ranges as high as 22ºC. Tr. 3:136-137; PEX 63. It is not until temperature approaches 30ºC that unimpaired streams are eliminated. Tr. 3:137; *see also,* PEX 63.

Dr. Baker then contrasted these patterns with those for conductivity. *See* PEX 64. He explained that most of the reference sites were below the Benchmark value of 300µS/cm but very few of the impaired sites were below that level. Tr. 3:138; *see also,* PEX 64. Not one reference stream or unimpaired non-reference stream had conductivity as high as the levels found in the Leatherwood tributaries. Tr. 3:138-39; PEX 64. Dr. Baker explained that from an ecological perspective, his analysis showed the habitat and temperature levels in the Leatherwood streams were likely within the ranges that macroinvertebrates would experience in their evolutionary history. Tr. 3:139-40. In contrast, conductivity levels in those streams

would be truly novel conditions, which these organisms would not have experienced prior to mining. *Id.* Dr. Baker explained "I would think of habit and temperature like a [poke] to the community structure, whereas the conductivity is like hitting the community with a sledgehammer." *Id.* at 140.

Dr. Baker's analysis confirmed that the patterns he observed from the dataset were causal. His analysis showed that while there is a clear causal pathway between mining, elevated conductivity, and stream impairment, there is no similar pattern of causality between mining, habitat and/or temperature, and impairment. Tr. 3:143-49. As he explained, "there is a pathway of causality between mining, conductance, and impairment that is not affected by whatever else is going on," such as habitat or temperature. Tr. 3:147-49. He further explained that this strong a pattern for a single causal variable was "rare' in ecology and "unequivocal evidence of a causal linkage." Tr. 3:150-51.

In addition to reviewing the data, Dr. Baker visited Fola's mining operations and the sites where Dr. Swan sampled for macroinvertebtrates in the streams below those operations. Tr. 3:151. He described the sites as he recalled them, pointing out defined boulders and cobbles within Cogar Hollow and Road Fork. Tr. 3:153-54, 156. He did not see enough sedimentation to fill the interstitial spaces that macroinvertebrates would depend upon. *Id.* at 156, 193. At Right Fork, he did not see much embeddeness at all in riffles, andthought that it would not be a problem for the macroinvertebrates. *Id.* at 158. He noted that even where embeddedness was present in the three streams at issue, it was not consistent throughout the reach, but "patchy." *Id.* at 158-59. Overall, Dr. Baker did not believe that the habitat he observed at the sites was sufficient to explain the patterns of biological degradation in those streams. *Id.* at 159. He explained that this conclusion was supported by the fact that forty to sixty percent of the taxa

that Dr. Swan did find in these streams were clinger taxa, which he would not expect to find if the streams were heavily impacted by sedimentation or precipitation. *Id.*

Finally, Dr. Baker finished his site-specific analysis by looking at the pattern of taxa lost in the Leatherwood tributaries. He noted, as had Dr. Palmer, that the complete absence of mayflies in those tributaries is strong evidence that conductivity is the cause of impairment. Tr. 3:162-64. This loss is striking and ecologically important because in healthy streams mayflies make up twenty-five to fifty percent of the total macroinvertebrate abundance. *Id.* at 163-64. In the streams below Fola's operations, mayflies were abundant prior to mining, but disappeared completely after Fola's mining. PEX 65. Additionally, there was a pattern of decrease in taxa known to be sensitive to conductivity across the sites, and a corresponding increase in the abundance of taxa known to be tolerant. PEX 65; Tr. 3:165-67. According to Dr. Baker, these patterns of biological change are important for two reasons: First, they are consistent with the literature on the topic; second, the magnitude of the change is consistent with his "sledgehammer" analogy. Tr. 3:167-68. Taking into account the patterns from the literature, those in the WVDEP dataset, his own causal analysis, his site visit, and finally his analysis of the change in community structure pre-and post-mining, Dr. Baker concluded that there was "no question" that elevated conductivity was the primary driver of impairment in the streams at issue. *Id.* at 168.

Argument

I. To Prove Specific Causation, OVEC's Burden is to Show, by a Preponderance of the Evidence, that Fola's Discharges of Ionic Pollutants Are Materially Contributing to Biological Impairment in Road Fork, Right Fork and Cogar Hollow

In a CWA citizen suit, a plaintiff need only prove a defendant's violation by a preponderance of the evidence. *Elk Run*, 24 F. Supp. 3d at 536, 557; *Fola (Stillhouse)*, 2015 WL

362643, at *1, *2. To show specific causation, OVEC does "not have a burden to exhaustively rule out alternative causes." *Fola (Stillhouse)*, 2015 WL 362643, at *8. OVEC need only show that Fola's discharges of ionic pollutants, measured as conductivity, materially contribute to biological impairment. *Id.* Strict "but for" causation or proximate causation is not required. *Id.* A "material contribution" standard means that "more than one factor can be a substantial cause, and no single factor need be the sole causative element." *Frito-Lay, Inc. v. Local Union No. 137*, 623 F.2d 1354, 1363 (9th Cir. 1980); *accord, Feather v. United Mine Workers of America*, 903 F.2d 961, 967 (3rd Cir. 1990). This Court has therefore held that OVEC "need only provide evidence showing it is more probable than not that ionic pollution as measured by conductivity is among some collection of material contributors." *Fola (Stillhouse)*, 2015 WL 362643, at *8.

To meet their burden, OVEC need only demonstrate a legal probability, not scientific proof, that there is a material contribution. The preponderance of the evidence standard does not require "scientific certainty." *Bunting v. Secretary of Health & Human Servs.*, 931 F.2d 867, 873 (Fed. Cir. 1991). The test is "not scientific certainty but legal sufficiency." *Fola (Stillhouse)*, 2015 WL 362643, at *17, *quoting Ferebee v. Chevron Chem. Co.*, 736 F.2d 1529, 1536 (D.C. Cir. 1984). The fact "that science would require more evidence before conclusively considering the causation question resolved is irrelevant." *Id.* It follows from that principle that a formal causal, epidemiological analysis is not required, but only reasoned and reliable expert testimony that tends to prove that causation or a material contribution is probable. The law in this Circuit supports that conclusion. *See Benedi v. McNeil-P.P.C., Inc.*, 66 F.3d 1378, 1384 (4th Cir. 1995) ("epidemiological studies are not necessarily required to prove causation, as long as the methodology employed by the expert in reaching his or her conclusion is sound"); *Fola (Stillhouse)*, 2015 WL 362643, at *17.

II. OVEC Proved That the Ionic Pollutants Discharged by Fola's Mines Specifically Cause or Materially Contribute to the Observed Biological Impairment in Downstream Waters

All of the factors cited by this Court to support its finding of specific causation and material contribution in the Elk Run and Fola Stillhouse cases support that same finding here. *Elk Run,* 24 F. Supp. 3d at 563-78; *Fola (Stillhouse),* 2015 WL 362643, at *19-*21. Road Fork, Right Fork, and Cogar Hollow below Fola's three mines are all biologically impaired, as measured by WVSCI scores below 68. Right Fork and Road Fork are also on WVDEP's § 303(d) list of impaired waters. Cogar Hollow is not on that list, but that stream's WVSCI score in 2014 was 41.81, well below the impairment threshold.

Since each mine began operating, there has been a pattern of increasing conductivity and decreasing WVSCI scores. Before the Fola 2 and 6 Mines began operating in the Road Fork and Cogar Hollow watersheds, the streams were in good condition, the levels of in-stream conductivity and sulfate were low, and there was no biological impairment. Before Fola's 4A Mine began operating in the Right Fork watershed, most sampled sites in that watershed had low conductivity and were not biologically impaired, but a minority of the sampled sites had elevated conductivity and a few had low WVSCI scores due to previous mining in parts of the watershed. After the 2, 4A, and 6 Mines began and disturbed the large majority of their respective watersheds, the conductivity levels increased by a multiple of five to ten and the WVSCI scores consistently showed biological impairment. Tr. 2:195-96.

The discharged mine water greatly exceeds the scientific thresholds that are generally capable of causing biological impairment. Those thresholds are 300 µS/cm for conductivity and 50 mg/l for sulfate. JEX 17 at xv; PEX 173 at JE0020, JE0023, JE0071; Tr. 2:110, 122, 125. The probability of impairment is 59% at 300 µS/cm, 72% at 500 µS/cm, and even higher at

greater conductivities. JEX 17 at A-36; Tr. 2:110-111. Here, the conductivity in Right Fork, Road Fork and Cogar Hollow is consistently over 1500 µS/cm and often much higher than that, and sulfate levels consistently exceed 1000 mg/l, so the likelihood of impairment is closer to 100% than 50%.

A temporal relationship between exposure and resulting harm is strong evidence of specific causation. *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 265 (4th Cir. 1999) ("a temporal relationship between exposure to a substance and the onset of a disease or a worsening of symptoms can provide compelling evidence of causation"). This Court applied that principle in the Fola Stillhouse case, holding that "[g]iven the multifold increase in conductivity observed after mining commenced in the Stillhouse Branch watershed, it can reasonably be concluded that mining is more likely than not the cause of high conductivity levels at Stillhouse Branch." 2015 WL 362643, at *20. Similarly, in the present case, Fola's mines are the only land use activity in the Right Fork, Road Fork, and Cogar Hollow watersheds that could account for the changed water chemistry and elevated conductivity. *Id.*

The mine water that Fola is discharging from its outlets contains ionic pollution that is characteristic of the type of mine water that is known in the scientific community to cause or contribute to impairment in Central Appalachian streams. Each mine is discharging levels of calcium, magnesium, sulfate and bicarbonate that are similar to those discharged in Boardtree Branch—a stream that Kunz identified as characteristic of the type of alkaline mine drainage that is toxic to macroinvertebrates such as mayflies. The taxonomic changes in the biological community in all three downstream watersheds show a reduction in sensitive taxa, especially mayflies. No mayflies were found in Right Fork, Road Fork, or Cogar Hollow below Fola's mines. That absence is consistent with multiple studies finding that high conductivity extirpates

mayflies. Pl. Ex. 173 at PE1536, JE0010, PE1832; Tr. 2:105-07, 137. Based on the same absence of mayflies in the Fola Stillhouse case, this Court found that that fact shows that "it is more likely than not that the aquatic macroinvertebrate community has been harmed because of ionic stress resulting from mining." 2015 WL 362643, at *20.

In addition to this site-specific field data showing biological impairment, increased conductivity, and taxonomic changes in all three streams, there is laboratory evidence showing that high conductivity from an ionic mixture similar to that in this case is directly toxic to aquatic life. The Kunz study used reconstituted mine water from a similar mine discharge into Boardtree Branch and found that the water was toxic to a mayfly native to West Virginia streams when the conductivity was 1092 µS/cm. The conductivity level in Fola's discharges at all three mines exceeds that level and therefore helps explain the absence of mayflies.[5]

III. Fola's Expert Admitted that Conductivity Is a Material Contributor, and His Testimony About Alternative Causes Is Unpersuasive

Dr. Menzie was Fola's only expert on specific causation and its only ecological expert on general causation.[6] He agreed that the three streams are biologically impaired with WVSCI scores below 68, that Fola's mines are discharging elevated levels of conductivity, and that Fola's mining activities are the only reason that the WVSCI scores are so low. Tr. 4:166-67.

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[5] Fola also admitted that two of its whole effluent toxicity tests in a pond in Road Fork were chronically toxic to a crustacean, *Ceriodaphia dubia*, that is probably not native to West Virginia streams and is less sensitive to conductivity than are mayflies. Tr. 4:3-4, 112.

[6] Fola's other expert witness, Dr. Garabrant, is an epidemiologist who testified only about the validity of EPA's benchmark. Tr. 74 ("I was hired to review the EPA benchmark report and to advise Mr. Harvey on whether it was done correctly"). That study only analyzed general, not specific, causation. JEX 17, p. A-2 ("the assessment is of general causation in the regions of concern, not for any specific taxon or location"); *see also id.* at A-40 ("this is an assessment of general causation"). Dr. Garabrant's testimony was limited to that one study and to issues of general causation and epidemiology. "The focus of epidemiology is on general causation (*i.e.*, is the agent in question capable of causing disease?) and not specific causation (*i.e.*, did the agent cause a disease in a particular individual?)." *Magistrini v. One Hour Martinizing Dry Cleaning*, 180 F. Supp. 2d 584, 590 (D.N.J. 2002), *aff'd*, 68 F. App'x 356 (3d Cir. 2003). "Because epidemiology is concerned with the incidence of disease in populations, epidemiology is probative of general causation; specific causation is beyond the domain of the science of epidemiology." *In re Silicone Gel Breast Implants Products Liability Litigation*, 318 F. Supp. 2d 879, 892 (C.D. Cal. 2004).

Dr. Menzie's opinion was that the primary driver of low WVSCI scores in the three streams is 1) precipitation from metal hydroxides, followed by 2) temperature and 3) conductivity. Tr. 4:37-38, 76. As to conductivity, he agreed that the three streams have extremely high conductivity that is twenty to fifty times higher than the level in reference streams. Tr. 4:132-33. He agreed that conductivity over 1000 µS/com influences WVSCI scores. Tr. 4:146. He also agreed that only five of the thousands of sites in the West Virginia database with conductivity above 1210 µS/cm, and none with conductivity above 1650 µS/cm, have passing WVSCI scores. Tr. 4:146-48. He stated that "there is ionic concentrations [sic] that are above reference areas due to sulfate, calcium, magnesium, bicarbonate, the mixture; that these are in a range that could pose some influence on the community via toxicity. That's *more likely than not* kind of a physiological effect, and that can influence some of the members of the community, particularly maybe some sensitive mayflies . . ." Tr. 4:85 (emphasis added). Similarly, he stated in his expert report that "[w]ith regard to site-specific causes of reduced WVSCI scores identified for Leatherwood tributaries, the plots support the conclusion that conductivity, substrate modification of habitat, and temperature all combine and interact to cause the observed conditions." Tr. 4:98-99; *see also* Tr. 4:103. On direct examination, after examining all of the general and specific support for conductivity, he concluded, "I believe a couple of things with regard to thinking about, you know, our tributaries. One is, we've got conductivities that range from a few thousand and higher. Conductivities are high enough that they would, you know, we cannot dismiss them as a cause. They are going to play some role." Tr. 3:240. Thus, Fola's own expert admitted that conductivity is a material contributor to impairment in these three streams.

This Court has held that OVEC does not have to rule out alternative potential causes of impairment, because "the applicable legal standard is met whether ionic pollution causes or materially contributes to chemical or biological impairment." *Fola (Stillhouse)*, 2015 WL 362643, at *8. Cases requiring a ruling-out of alternative causes are based on claims requiring proof of causation, not a material contribution, and are therefore inapposite. *Id.* "As a matter of plain meaning and common sense, it is possible to identify a factor that is materially contributing to a given condition without conclusively eliminating contributions by additional factors in a dynamic system." *Id.* at *9.

Dr. Menzie identified a variety of *possible* alternative causes of biological impairment in streams below mine sites, including changes in forest cover, habitat, temperature, sediment ponds, precipitates, embeddedness and sedimentation. Tr. 3:224-32; Tr. 4:7-13, 39-75. None of the five published stream studies that he cited in his testimony and that were admitted into evidence documented a relationship between any of those alternative causes and biological impairment at any West Virginia mining sites with alkaline mine drainage. DEX 16 (effects of urbanization in three metropolitan areas on benthic macroinvertebrates), Tr. 3:227-28; DEX 62 (effects of water temperature on benthic insects in streams in Germany), Tr. 4:42-44; DEX 66 (effects of ponds on downstream organisms), Tr. 4:39-41; DEX 75 (effects of acid mine drainage on Rocky Mountain streams in Colorado), Tr. 4:9-11; DEX 184 (effects of iron on river ecosystems), Tr. 4:12-13. Dr. Menzie tried to publish an article in a scientific journal based on his testimony in the Stillhouse case on the relationship of temperature to biological impairment in West Virginia streams and that article was rejected. Tr. 4:88-90.

In any event, even if OVEC were required to analyze or eliminate the other alternative causes identified by Dr. Menzie, OVEC's experts demonstrated that, at each site, they are not

likely to be a more important cause than conductivity. With regard to embeddedness and sedimentation, which are subsets of a habitat assessment, Dr. Palmer explained that the measured RBP scores at each site are in the suboptimal range and are too high to explain the observed WVSCI scores and level of impairment. Tr. 2:160-62, 185, 194-95. Dr. Baker visited each stream, reviewed the habitat data, and concluded that embeddedness and sedimentation were not the primary stressors. He explained that 40 to 60 percent of the taxa found in the streams are clingers, and those taxa are not normally in streams that are heavily impacted by sedimentation. Tr. 3:192-93.[7] In addition, the leaf packs in the streams here are bereft of most taxa, which would not be true in a healthy stream, and that shows that some stress other than sedimentation is involved. *Id.* Dr. Baker stated that the iron and manganese precipitates that are related to embeddedness are caused by the elevated stream conductivity. Tr. 3:198-99. Dr. Palmer testified similarly on this issue in the Fola Stillhouse case, and this Court credited her testimony that "embeddedness was not a function of sediment accumulation, but rather a function of chemical precipitates" related to conductivity. *Fola (Stillhouse)*, 2015 WL362643, at *21.

In addition, peer-reviewed studies involving Appalachian streams have controlled for habitat and still found a strong correlation between conductivity and impairment. Bernhardt (2013), PEX 173 at JE0022; Pond (2014), PEX 173 at PE1836 ("biological variation was strongly correlated with water chemistry and less by reach-scale habitat and landscape conditions"); Tr. 2:123, 3:14. Other peer-reviewed studies have found that habitat is not a confounding variable. Suter (2013), PEX 173 at JE0094 ("the weight of the scored body of evidence indicated that habitat was not a substantial confounder"); EPA Benchmark, JEX 17 at B-9 to B-12 (same); Hitt (2014), PEX 173 at JE0121 ("[e]ffects of [mountaintop mining] were

[7] The transcript has a typo that says "cleaner" instead of "clinger" taxa.

not related to physical habitat conditions but were associated with water-quality variables"); Tr. 2:128, 131. And other peer-reviewed studies have found that conductivity has a greater effect on biological impairment than habitat. Pond (2008), PEX 173 at JE0198, Tr. 3:11; Pond (2010), PEX 173 at PE1537, Tr. 3:13; Merriam, JEX 11 at 406, Tr. 3:20-22. Published peer-reviewed studies also reject stream embeddedness as a confounder or alternative cause of impairment. Suter (2013), PEX 173 at JE0094 ("[n]o evidence supported embeddedness as a confounder").

Fola's experience with remedial efforts at Boardtree Branch provides even more compelling evidence that precipitates and embeddedness are not the cause of biological impairment. In its 2012 consent decree with OVEC to settle the same type of claim that is involved in this case, Fola agreed to remove precipitates from the stream as an experiment to reduce conductivity and impairment. *OVEC v. Fola Coal Co.,* Civil No. 2:10-1099 (S.D.W.Va.), Docket No. 66, para. 33. According to Fola's 2015 quarterly status report in that case, that removal was substantially completed in December 2013, yet a year later in October 2014 the conductivity was still 2670-3480 µS/cm and the WVSCI score at the Fola-2 downstream site on Boardtree Branch was 56. PEX 175; Tr. 4:152-55, 171-72, 174-75. Thus, at that similar site, removing sedimentation and embeddedness caused by precipitates has not cured either high conductivity or biological impairment.

As to temperature, Dr. Palmer testified that the measured stream temperatures in the three streams here are within the temperature range of West Virginia reference streams and would not cause impairment. Tr. 4:180. In addition, published peer-reviewed studies reject temperature as a potential confounder or alternative cause of biological impairment. Suter (2013), PEX 173 at JE0091; EPA Benchmark, JEX 17 at B-21 to B-22. EPA concluded that "elevated temperature does not appear to be associated with the loss of [mayflies] and the relationship of conductivity

to [mayflies] is not influenced by elevated temperatures." *Id.* at B-21. By analyzing the full dataset of temperatures in reference streams, unimpaired non-reference streams, and impaired streams, Dr. Baker determined that temperature was not a factor that varied substantially between the three stream categories. Tr. 3:131; PEX 61, 63.

As to sediment ponds, Dr. Baker stated that those ponds cannot explain the complete lack of mayflies in downstream waters. Tr. 3:193. Based on her extensive field experience sampling hundreds of ponds below streams in the Chesapeake Bay area, Dr. Palmer stated the ponds do not change the composition of the invertebrate community below the ponds, and do not cause downstream impairment. Tr. 4:178. In addition, published peer-reviewed studies also reject the presence of upstream sediment ponds as a potential confounder or alternative cause. EPA Benchmark (2011), JEX 17 at B-28; Suter (2013), PEX 173 at JE0096 ("the presence of ponds has little or no effect on invertebrate response to conductivity"); Tr. 2:129.

Dr. Menzie's entire analysis of causation was based on the premise that stream impairment under WVSCI was ultimately driven by differences from reference conditions. Tr. 3:217-18, 221. He failed to recognize, however, that of the three causal factors he identified—embeddedness from precipitation, temperature, and conductivity—conductivity was by far the variable most different in the Leatherwood sites from reference conditions. *See* PEX 62, 63, 64; *see also,* Tr. 3:138-40. This illustrates the key deficiency of Dr. Menzie's analysis. He did not use a consistent set of criteria to determine the relative contribution of different factors that influence community composition in these streams. For example, he largely ignored the Kunz study, which is the only laboratory study on the toxicity of high-conductivity mine water to mayflies. Tr. 4:146-47. Moreover, he ignored site specific WET tests showing water from the pond above Road Fork was toxic to *C. dubia* in a lab. PEX 174. Also, while Dr. Menzie focused

on temperature and embeddedness as likely causes of impairment, he ignored the fact that there are unimpaired streams in the WV dataset with recorded temperatures well above 25ºC and that a full 10% of the unimpaired non-reference streams have embeddedness scores below 5. PEX 61, 62, 63. Despite Dr. Menzie's lengthy testimony about temperature and habitat, his decision to weight those factors more heavily than conductivity was arbitrary.

In sum, the preponderance of the evidence shows that high conductivity related to the ionic mixture discharged from Fola's three mines is the primary contributor to the observed biological impairment in the three streams. OVEC has unquestionably met the "materially contribute" test for liability. Fola is therefore liable for violating its WV/NPDES permits.

IV. OVEC Has Shown that Fola's Mines Have Violated SMCRA by Causing Violations of Water Quality Standards and Material Damage to the Hydrologic Balance Outside of Its Permit Area in Road Fork, Right Fork and Cogar Hollow

In addition to violating the CWA, Fola's mining operations have violated SMCRA by violating two performance standards adopted by West Virginia pursuant to the State Surface Coal Mining and Reclamation Act: (1) the standard prohibiting a violation of water quality standards (38 C.S.R. § 2-14-.5.b.) and (2) the standard prohibiting material damage to the hydrologic balance outside the permit area (38 C.S.R. § 2-14.5). Compliance with those standards is a requirement of Fola's SMCRA permits. 22 W.Va. Code § 22-3-13. The definition of "material damage" does not appear in the regulatory section containing performance standards. *See* 38 C.S.R. § 2-14. It does, however, appear in a separate section describing permit application requirements. 38 C.S.R. § 2-3.22.e. There, material damage is described as "any long term or permanent change in the hydrologic balance caused by surface mining operation(s), which has a significant adverse impact on the capability of the affected water resource(s) to support existing conditions and uses." *Id.*

When WVDEP implemented the program change to insert this definition, it was required to seek approval from the federal Office of Surface Mining Reclamation and Enforcement (OSM). 30 U.S.C. § 1253. In its explanatory letter seeking approval, WVDEP explained that the phrase "capability of the affected water resource(s) to support existing conditions and uses requires it to consider water quality standards it has promulgated pursuant to § 303(a) of the federal Clean Water Act as part of the material damage inquiry under surface mining law." *Ohio Valley Environmental Coalition, Inc. v. Salazar*, 2011 WL 11287 at *4 (S.D. W.Va. Jan. 3, 2011). OSM relied upon this interpretation for its approval, finding:

> under the proposed definition, in order to assure that mining will not result in a long term or permanent change in the hydrologic balance which has a significant adverse impact on the capability of a receiving stream to support its uses, a proposed mining operation must *consistently* comply with the water quality standards for the designated uses for the receiving stream.

Id. at *5 (emphasis added). As OVEC has shown above, in the case of Surface Mine Nos. 2, 4A and 6, rather than consistently complying with water quality standards, Fola has consistently violated them. Fola is therefore liable for violating its SMCRA permits.

Conclusion

For these reasons, the Court should enter a declaratory judgment finding Fola liable for violating its CWA and SMCRA permits.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, J. Michael Becher, hereby certify that on June 24, 2015, I served a true and correct copy of the foregoing Plaintiffs' Post-Trial Brief through CM/ECF, which will provide electronic notification to all parties.

/s/ J. Michael Becher
J. Michael Becher